Author's response to reviews

Title: Vulnerability to HIV infection among female drug users in Kathmandu Valley, Nepal: a cross-sectional study.

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Author's response to reviews: see over
Authors’ response to the Reviewers’ comments

Title: Vulnerability to HIV infection among female drug users in Kathmandu Valley, Nepal: a cross-sectional study.

Authors: Bhagabati Ghimire, S. Pilar Suguimoto, Saman Zamani, Masako Ono-Kihara, Masahiro Kihara.

Authors’ response to the general comments

Thank you to the editor and referees for their time and valuable remarks. We appreciate the thorough and thoughtful comments given by them. We have made the necessary revisions and as a result we feel these edits have strengthened our manuscript.

As described hereafter, we have made major revisions to the Background, Results and Discussion sections. The Background section has been amended to introduce the global situation. Variables with several response categories in the Results section have been re-categorized to create less response categories. The Discussion section has been reorganized and we have included the possible limitation associated with the sampling method.

Also, as requested by the editor, we have included the missing sections for: a) Conclusions; b) List of abbreviations; c) Competing interests; and d) Authors’ contributions. We have corrected few typing/style errors. Finally, the manuscript has been largely proofread and edited by native English speakers.

We would like to give a point-by-point to the comments from the referees as listed below:

Referee 1

Overall comment:

This study investigated the prevalence of HIV infection and analyzed the associated risk factors for HIV infection among 269 female drugs users in Kathmandu Valley, Nepal. The results showed both HIV and the risk behaviours including drug uses and sexual activities were highly prevalent among those participants. Based on the bivariate and multivariate analyses, the authors found HIV infection were associated with older age, history of school attendance, frequent sharing of injection instruments and unsafe sex practices with commercial or casual partners. This is a potential important paper to understand current situation of HIV prevalence among female drug users in Kathmandu Valley, Nepal.

Response: Thank you very much for the comments. They are greatly appreciated.

Specific comments:
1. In this study, HIV infection is found to be associated with having education history, and authors stated that “Ever attended school” was the most potent predictor of HIV infection and “higher education history remained strong predictors of HIV infection……”. In the tables, “Ever attended school” variable were classified into two subgroups (No and Yes). There were no comparison of education levels, only Yes or No. Therefore, I think the statement for “higher education history remained strong predictors of HIV infection……” is without foundation. Furthermore, it’s reported that adult literacy (age 15+) in Nepal was reported to be 60.3% (female: 46.3%, male: 73%) in a 2010 population census. I found this figure is as high as 81.8% (220/269) in this cohort. This maybe mean education is common in Nepal. Therefore, I suggest authors maybe need to classify the education levels in details, then find out the association with the HIV infection and give a conclusion with caution.

Response: Following the suggestion, we have used the original variable for educational level, showing four categories, in Table 1.

2. The result showed that the people who have more condom use are more likely to be HIV positive. Authors gave one possible reason “that participants who were involved in commercial sex and knew their HIV infection before the study might have provided socially desirable answers to our interview, or they were really using condoms to prevent HIV transmission to their clients.” Do author have any data about these participants who have been tested HIV before this study to support this possible reason?

Response: Unfortunately, we do not have data about their previous HIV status. However, it is reasonable to speculate that given the strong social stigma attached to commercial sex work these women would provide a socially desirable answer (unaware of their HIV status) or that because of the awareness of their HIV status they are actually using condoms to prevent further HIV transmission. This would be an important area that needs further research.

3. In results section, authors found HIV infection was associated with older age groups, and Table 1 indicated this association without statistical difference (p>0.05). On the other hand, variables included in the multivariate models were those significantly associated with HIV infection in bivariate analyses. However, we found age variable not only was involved in the multivariate analyses and it was also significant associated with HIV infection. Therefore, I wonder why age variable was still chosen in the multivariate analyses? How to explain these results from two analyses?

Response: The Table 1 showed the age variable as a categorical variable to show the tendency of increased likelihood of having an HIV positive test with older age. However, age was obtained as a continuous variable and as such found to be significantly associated to having an HIV positive test (p<0.001). Therefore, the continuous variable for age was included in the multivariate analysis.
Other comments:

1. In the abstract section, the number in this sentence “Nearly half (n=132) of the total participants had shared needles or syringes in the past month” is wrong, may be n=137 shown in Table 2.

   Response: Thank you for pointing out this. We have made the correction to the abstract.

2. In the results section, the contexts of paragraph 6 maybe need to be stated at the beginning of introduction for Table 2. The logic of context for Table 2 is a little confused.

   Response: Thank you for your observation. The results section has been rephrased, including the introduction for Table 2, to make it clearer and understandable.

Referee 2

Overall comment

The authors are addressing important research questions in this study. Unfortunately, there are multiple limitations both regarding the design, analytical approaches and to the drafting of the paper. The major limitations are related to 1) the sampling approach; 2) tables needs to be cleaned up, e.g. reduce categories in Table 2; 3) The drafting of the paper, particularly the discussion.

Response: The authors would like to thank the referee for his helpful remarks. We have made major revisions addressing the comments. As suggested, 1) the sampling approach has been re-written in a clearer way; 2) changes have been made to Table 1 and Table 2 to give a cleaner look and also the response categories of six variables from Table 2 have been re-grouped; 3) the Discussion section of the manuscript has been extensively edited.

The authors’ responses to the major revisions are given below:

1. Background: This would have worked much better if the authors started with a global focus (global literature on female drug users) before moving into the local setting. Also, not clear where on paragraph starts and ends.

   Response: We have inserted a paragraph at the beginning of the Background section to provide a global focus on drug users and female drug users. New references were added in this section.

   Also, we left one line blank between paragraphs throughout the manuscript to make it look less crowded.
2. Methods: The sampling approach is not precise enough to make a proper judgement on potential biases. Seems to include a “snowball” approach with no restriction in the number on respondent can recruit and without any effort to discuss the magnitude and direction of the possible biases in the prevalence estimate. The authors needs at least to describe recruitment and if restrictions on how many on respondent could recruit. This is needed as a basis for a thorough discussion on biases.

Response: The setting and sampling procedures in the Methods section have been largely revised to make it more understandable. We used snowball sampling technique; and a better description of the sampling methodology has been added to this section in page 5.

The possible biases and limitations introduced by the sampling procedure have been stated in the Discussion section (page 13).

3. Results and tables: needs to be cleaned up, and multiple recoding efforts of variables are needed for the analysis (reduction of values/categories), e.g. Table 2.

Response: We kept the outside borders of the tables to the minimum to give a cleaner look to the tables. We adjusted the columns to better fit the pages. We made the following changes to each of the tables:

Table 1:
- a) We used a more detailed variable for level of education.
- b) We reduced the number of columns, using only one column for n and the percentage in brackets [n(%)]. We did the same for the crude OR and its 95%CI.
- c) We moved the p value to the last column.

Table 2:
- a) Response categories were reduced (re-grouped) for six variables using frequencies (of injecting with a needle or syringe..., sharing cooker..., injecting drugs..., and condom use with different sexual partners).
- b) Response categories were reduced from four or five categories to three response categories using the same response categories as in Table 3.
- c) The columns were arranged in the same way as Table 1 (p value at the end and one column for [n(%)]).

Table 3:
- a) We deleted the outside borders and arranged the columns.

4. The discussion is mostly a repetition or continuation of results and thus being far from a proper discussion. The discussion must include a much more focussed paragraph on possible biases related to the sampling approach used.

Response: The Discussion section has been largely revised, reorganized, and includes the possible limitation associated with the sampling methods.
5. Quality of written English: Not suitable for publication unless extensively edited

Response: Now the manuscript has been extensively proofread and edited by native English speakers.